

Course Information

Course Number: ECEN 615
 Course Title: ECEN 615 – Methods of Electric Power Systems Analysis
 Section: All
 Time: Tuesday and Thursday from 8 to 9:15 am
 Location: Online via Zoom.
 Credit Hours: 3
 Course Public Website: <https://overbye.engr.tamu.edu/ecen-615-fall-2020/>

Instructor Details

Instructor: Prof. Tom Overbye
 Office: 308C WEB
 Phone: 979-458-5001
 E-Mail: overbye@tamu.edu
 Office Hours: Mondays 1-2:30pm or by appointment
 Instructor Website: <https://overbye.engr.tamu.edu/>

Graduate Student Assistant: Julian Thekkemathiote
 Graduate Student E-Mail: julianprasadt@tamu.edu
 Graduate Student Office Hours: Wednesdays 3-5pm

Course Description

The course provides a graduate level introduction to power system analysis. The specific topics covered are listed.

Course Topics	Approx. # of hours
Introduction to Power Systems	4
Overview of Power System Modeling and Operation	4
Power Flow	6
Sparse Matrices in Power System Analysis	6
Sensitivity Analysis and Equivalents	6
Power System Data Analytics and Visualization	3
Optimal Power Flow and Power Markets	6
Power System State Estimation	5
High Impact, Low Frequency Events	3
Total	43

Course Prerequisites

ECEN 460 or ECEN 459 or Equivalent or Consent of Instructor

Special Course Designation

None

Course Learning Outcomes

At the conclusion of the course the student should be able to perform steady-state analysis of large-scale electric power systems.

Textbook and/or Resource Materials

A. J. Wood, B. F. Wollenberg, G. B. Sheble, *Power Generation, Operation and Control*, Third Edition, Wiley, 2013, ISBN-13: 978-0471790556.

Grading Policy

The course will have two exams as well as graded homework and a project. The final grade will be based 35% on the first exam, 35% on the second exam, and 30% on the homework and project. Both exams are closed-book, closed-notes. You may bring in one notesheet (8.5" by 11" both sides), and may use calculators.

All grading in the course is based on a percentage with final grades determined based on this percentage. If your final average falls within the below ranges you are guaranteed to receive at least the letter grade indicated: A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: 59 or lower. At the discretion of the instructor these ranges may be extended downward (i.e., providing you with a higher final grade).

Graded Class Participation

Class participation is not graded, though students will be required to present results from their course project, either during class or at a mutually agreed upon time. The presentation will be done using Zoom.

Graded Attendance

Class attendance is not graded. However, see below for the university attendance policy.

Late Work Policy

The receive 100% on the homework and project, it must be turned in on the assigned data. Late work is accepted with a loss of 25% per day late. Work submitted by a student as makeup work for an excused absence is not considered late work and is exempted from this late work policy. (See Student Rule 7.)

Course Schedule

The tentative dates for the exams are Thursday October 1 and Tuesday November 17. The course project presentations will be given during class for the on campus students on November 19 and 24. The written course project will be due on November 24. Homework assignments will be due on most Thursdays (unless the instructor provides an extension).

University Policies

This section outlines the university level policies that must be included in each course syllabus. The TAMU Faculty Senate established the wording of these policies.

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that

student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

COVID-19 Temporary Amendment to Minimum Syllabus Requirements

The Faculty Senate temporarily added the following statements to the minimum syllabus requirements in Fall 2020 as part of the university's COVID-19 response.

Campus Safety Measures

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Fall 2020 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. **Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction.**
- Face Coverings—[Face coverings](#) (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Description of face coverings and additional guidance are provided in the [Face Covering policy](#) and [Frequently Asked Questions \(FAQ\)](#) available on the [Provost website](#).
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- To attend a face-to-face class, students must wear a face covering (or a face shield if they have an exemption letter). If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the [Student Conduct office](#) for sanctions. Additionally, the faculty member may choose to teach that day's class remotely for all students.

Personal Illness and Quarantine

Students required to quarantine must participate in courses and course-related activities remotely and **must not attend face-to-face course activities**. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Students experiencing personal injury or illness that is too severe for the student to attend class qualify for an excused absence (See [Student Rule 7, Section 7.2.2.](#)) To receive an excused absence, students must comply with the documentation and notification guidelines outlined in Student Rule 7. While Student Rule 7, Section 7.3.2.1, indicates a medical confirmation note from the student's medical provider is preferred, **for Fall 2020 only, students may use the Explanatory Statement for Absence from Class form in lieu of a medical confirmation. Students must submit the Explanatory Statement for Absence from Class within two business days after the last date of absence.**